ADDENDUM NUMBER: **THREE**

ISSUED BY: **SEPW Architecture Inc.**
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PROJECT: **INTERIOR FIT-UP**
REGINA, SASKATCHEWAN

This Addendum forms part of the Contract Documents and amends the original Drawings and Specifications dated 2016-03-11, previous Addenda if applicable and as noted below. This Addendum consists of 3 pages and attached Specification Sections and Drawings as listed below.

Ensure that all parties are aware of all items included in this Addendum.

The following revised or additional Specification Sections accompany and form an integral part of this Addendum:

Section No.	Title	Pages	Date of Issue
23 36 00	AIR TERMINAL UNITS	5	2016-05-25

The following revised or additional Drawings accompany and form an integral part of this Addendum:

Dwg. No.	Title	Date of Issue
AR-3	MOBILE SHELVING CLEARANCES	2016-05-25
AR-4	GROUTED TRACK DETAIL	2016-05-25

A-3-1 REF. SECTION 08 71 00 - DOOR HARDWARE

.1 REVISE: As follows:

FIRST FLOOR	
Door 146C	Door 153B
Fire Rated Double Door 1 lockset: ANSI F15 6 butts NRP 2 closer 1 coordinator 2 surface flush bolts (heavy duty with keeper) Reuse existing strike. Align with lockset.	Fire Rated Double Door 1 lockset: ANSI F15 6 butts NRP 2 closer 1 coordinator 1 floor stop 1 transfer EA281 1 electric strike HES 1006-12/24-630 with dead bolt face plate and dead bolt keeper

A-3-2 REF. SECTION 08 80 50 – GLAZING

2.1.2.1 DELETE: "(use 6mm low-iron glass for glazed panel beside door 210)".

A-3-3 REF. SECTION 09 06 01 – ROOM FINISH SCHEDULE

.1 REVISE: Schedule items as follows:

Room No.	Floor	Base	Walls				Ceiling	Notes:
			N	S	E	W		
Main Floor								
146	EXIST.	-	EXIST./ PT-1	EXIST./ PT-1	EXIST./ PT-1	EXIST./ PT-1	EXP	New gypsum partitions to be painted; existing partitions to remain as is.
MAIN NORTH/ SOUTH CORRIDOR Grids 6 to 9	EXIST.	CPT	-	-	-	PT-1	EXIST.	Between grid lines 6 -9. New gypsum partitions are to be painted. Refer to Detail 2/A3.2 for all other new finishes.

A-3-4 REF. SECTION 23 31 14 METAL DUCTS LOW PRESSURE TO 500 PA

.1 Add the following article,

"2.11 FUME HOOD DUCTING
.1 To ASTM A480/A480M, Type 316 stainless steel.
.2 Finish: No. 4.
.3 Thickness, fabrication and reinforcement: to SMACNA.
.4 Joints: to ASHRAE and SMACNA be continuous inert gas welded"

A-3-5 REF. SECTION 23 31 15 METAL DUCTS HIGH PRESSURE TO 2500 PA

.1 Add the following article,

"2.9 FUME HOOD DUCTING
.1 To ASTM A480/A480M, Type 316 stainless steel.
.2 Finish: No. 4.
.3 Thickness, fabrication and reinforcement: to SMACNA.
.4 Joints: to ASHRAE and SMACNA be continuous inert gas welded."

A-3-6 REF. SECTION 23 36 00 AIR TERMINAL UNITS

.1 Add complete Section 23 36 00 – Air Terminal Units, attached.

A-3-7 REF. SPECIFICATIONS SECTION 26 05 36 – CABLE TRAYS

.1 REVISE: item 2.1.5 to read: "Solid cable tray shall be 12 to 18 gauge steel construction, minimum of 105mm deep, 305mm or 450mm widths as noted on the drawings, in standard 3048mm lengths, with hinged or clip-on cover. Solid tray shall be painted custom colour as specified by architect.

A-3-8 REF. DRAWING A2.2 – REFLECTED CEILING PLANS – SECOND FLOOR

.1 CLARIFICATION: Detail 2/A2.2; ceiling height note “3050”mm indicates to underside of open-web steel joists. The underside of deck is 4000mm.

A-3-9 REF. DRAWING AR-3 – MOBILE SHELVING CLEARANCES

.1 ADD: clearance dimensions as shown on AR-3 for mobile storage system. Confirm clearances prior to layout.

A-3-10 REF. DRAWING M1.1 – LEGEND, EQUIPMENT SCHEDULES AND GENERAL NOTES

.1 Under Equipment Schedule: Dedicated Air Conditioning Units replace “Sample Product: Mitsubishi Electric Model MUY-GE09NA” with the following, “Basis of Design: Mitsubishi Electric Evaporator - PKA-A12HA6 and matched Condensing Unit PUY-A12NHA6.”

A-3-11 REF. DRAWING M2.1 – CRAWL SPACE FLOOR PLAN - PLUMBING DEMOLITION AND REVISIONS

.1 Add the following general note, “New acid waste pipe shall match or be compatible with existing acid waste pipe. Contractor shall confirm compatibility before ordering.”

A-3-12 REF. DRAWING M4.3 – SECOND FLOOR PLAN VENTILATION DEMOLITION

.1 Add the following general note, “Remove fume hood exhaust ducts penetrating roof to above roof, as required to facilitate installation of new roof cap, refer to Architectural. Cap, seal and abandon fume hood exhaust duct above roof. Exhaust fans shall be abandoned, lock out breakers at MCC in Basement.”

.2 Add the following general note, “It is assumed that all existing fume hood ducts are fully welded.”

A-3-13 REF. DRAWING M4.4 – MAIN FLOOR PLAN VENTILATION REVISIONS

.1 Revise tag for new Exhaust Valve at Grids B and 9, from EV1.35 to EV1.36.

A-3-14 REF. DRAWING E1.2 - SECOND FLOOR LIGHITNG DEMOLITION PLAN

.1 Reference Detail 1 Lighting Demolition Plan – Second Floor: All existing light fixtures labelled as ‘EX’ shall be revised to ‘REM’ and shall be removed.

END OF ADDENDUM NO. 3

1 General

1.1 SUMMARY

.1 Section Includes:

.1 Variable volume boxes.

1.2 REFERENCES

.1 American National Standards Institute (ANSI)

.1 ANSI/AMCA 210-1999, Laboratory Methods of Testing Fans for Aerodynamic Performance Rating.

.2 ANSI/NFPA 90A-2002, Standard for the Installation of Air Conditioning and Ventilating Systems.

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.3 International Organization of Standardization (ISO)

.1 ISO 3741-2001, Acoustics-Determination of Sound Power Levels of Noise Sources Using Sound Pressure - Precision Methods for Reverberation Rooms.

.4 Underwriter's Laboratories (UL)

.1 UL 181-2003, Factory-Made Air Ducts and Air Connectors.

1.3 SYSTEM DESCRIPTION

.1 Performance Requirements:

.1 Catalogued or published ratings for manufactured items: obtained from tests carried out by manufacturer or those ordered by manufacturer from certified ADC (Air Diffusion Council) testing agency signifying adherence to codes and standards.

1.4 SUBMITTALS

.1 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 33 00 - Submittal Procedures. Include product characteristics, performance criteria, and limitations.

.1 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures. Test data: to ANSI/AMCA 210.

.1 Submit published test data on DIN (Direct Internal Noise), in accordance with ISO 3741 made by independent testing agency for 0, 2.5 and 6 m/s branch velocity or inlet velocity.

.2 Sound power level with minimum inlet pressure of 1 kPa in accordance with ISO 3741 for 2nd through 7th octave band, also made by independent testing agency.

.3 Pressure loss through silencer shall not exceed 60% of inlet velocity pressure maximum.

.2 Shop Drawings:
- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate the following:
  - .1 Capacity.
  - .2 Pressure drop.
  - .3 Noise rating.
  - .4 Leakage.

.3 Closeout Submittals:
- .1 Provide maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

2 Products

2.1 MANUFACTURED UNITS

.1 Terminal units of the same type to be product of one manufacturer.

2.2 EXHAUST VARIABLE AIR VOLUME VALVE

.1 The system specified shall be based on electronically pressure independent environment airflow control valves used on the return/exhaust from the space. The EMCS shall be able to directly control through hardwire and/or integrate to the airflow control valve through on-board BACnet® interface.

.2 All control equipment required to fulfill this Specification shall be manufactured and provided by the airflow control valve equipment manufacturer.

.3 Unit shall consist of a compression section, two airflow control surfaces, factory-mounted digital vortex airflow measuring device factory-mounted standard speed electric actuator, integral access panel and integrated high performance closed-loop feedback controller with native BACnet.

.4 The compression section shall divide the airstream into at least two separate airstreams. Each airstream shall be approximately equal in size and the total open area shall be approximately 50% of the duct open area. The divided sections shall cause compression therefore creating a more laminar flow for better airflow measurement and turndown. The compression section shall be of an aerodynamic shape with a static regain section to insure minimal pressure drop. The valve shall not require any duct straight runs either upstream or downstream of the airflow valve to achieve required specified performance

.5 Airflow control valves shall be a linear type and shall operate with a minimum turndown ratio of 8 to 1. Accuracy of the airflow valve shall be 5% of reading in the 8 to 1 range of the damper .

.6 The airflow control valve shall be capable of being mounted in any position (360º mounting plane) in ductwork without the need for recalibration. It shall not be required to specify mounting plane when ordering valve. Airflow valves that must be ordered and mounted in either a vertical or horizontal plane will not be acceptable.

.7 Airflow control valves shall operate without linkages, springs, levers, or bearings, in the airstream due to the effect of exhaust air on those materials, and shall exhibit no deadband or hysteresis. Airflow control valves shall be provided as “fail last position”.

.8 All critical components of the airflow control valve shall be easily accessable from one side of the valve. All linkages shall be out of the airstream to avoid possible corrosion and loss of accuracy. Airflow valves that cannot be mounted with accessible control components (i.e. pivot arm/actuator) in the 4-8 o'clock orientation will not be acceptable.

.9 Airflow control valves shall be of a low pressure drop design for energy efficiency. Valves shall not require greater pressure drop than listed on equipment schedule. Airflow control valves that require higher pressures to operate shall not be acceptable.

.10 The airflow valve shall be complete with a digital vortex type airflow sensing device providing true airflow feedback for the system. Airflow valves using mechanical means for creating pressure independence will not be acceptable. Airflow valves incorporating pitot, orifice, venturi airflow or thermal airflow measurement will not be acceptable.

.11 Airflow measuring devices shall be of the Vortex Shedding type, capable of continuously monitoring the airflow volume of the duct served and electronically transmitting a signal linear to the airflow volume. Pitot, Orifice Venturi or Thermal Airflow sensors shall not be acceptable due to their susceptibility to coating and plugging of the sensors.

.12 Individual airflow sensors shall be of rugged construction, and shall not require special handling during installation. Sensors shall be mounted on support bars. Standard materials shall be manufactured of corrosion resistant plastic.

.13 Individual velocity sensors shall not be affected by dust, temperature, pressure, or humidity. The sensors shall be passive in nature, with no active parts within the air stream. The output from individual sensors shall be linear with respect to airflow velocity and shall be capable of sensing airflow in one direction only. The velocity sensors shall not require calibration.

.14 For another velocity sensing method to be considered equivalent to basis of design it must provide the basic requirements for linear electronic output, turndown, accuracy, materials of construction, and output signal. If differential pressure devices are to be considered (such as pitot and venturi), dual differential pressure transmitters, the span of the lower transmitter being one tenth the span of the higher, with an accuracy not less than +/- 0.5%, shall be utilized to provide the required turndown. Orifice type devices shall have a Beta ratio of 0.7 or less, and shall be installed in accordance with ASME MFC-3M guidelines for up and downstream conditions.

.15 Sensing methods employing thermal devices in the airstream shall not be acceptable due to their susceptibility to dust and dirt buildup in an exhaust airstream.

.16 The airflow sensors shall be easily accessable in the valve for inspection without removing valve from the duct. Airflow control valves provided without built in inspection ports will not be acceptable.

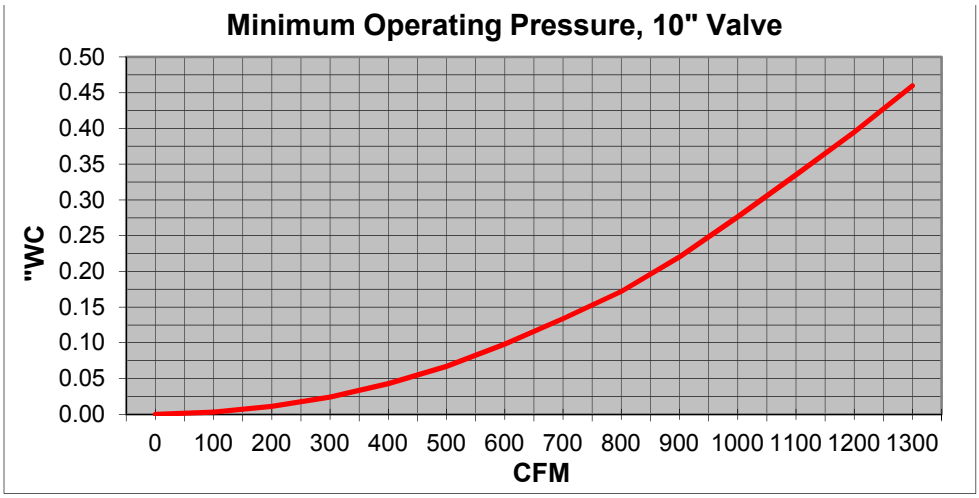
.17 Use of valve or damper position for calculation of airflow volume is not acceptable. Direct airflow measurements must be taken.

.18 Airflow control valves shall have an integral closed-loop feedback controller. Airflow measurement through the vortex airflow sensor shall send the digital signal to the controller which modulates the standard speed electric actuator to maintain desired airflow setpoint. The airflow setpoint shall have the capability of being provided through analog input, digital input, communications over BACnet MS/TP or AVC internal

program memory. Analog output signal shall be provided for airflow and alarm outputs must be provided to indicate abnormal airflow conditions. Coordinate with Division 25.

.19 Valve body material for non-corrosive service shall be 18 gauge aluminum for body and 16 gauge for blades.

.20 Minimizing energy consumption is of primary importance in the system design; therefore any airflow control valve considered for this project must be submitted with test data showing the Minimum Operating Pressure of the valve as tested in accordance with ANSI/ASHRAE STD 130-2008 Paragraph 5.3. The submitted test data must be in the form of an xy plot, with the y axis representing differential pressure measured across the fully opened valve and the x axis representing airflow volume measured through the fully opened valve. The test data for each size valve must include the entire published operating range of the valve. Standard literature for submitted valve must show both a curve and spreadsheet of minimum operating pressure drop versus CFM throughout its operating range. Any airflow control valve that does not publish this information will not be considered for this project. The example below is provided for an airflow control valve with a published minimum operating pressure of 0.3" wc and full scale range of 1,000 cfm.



1 Execution

1.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

1.2 INSTALLATION

.1 Install in accordance with manufacturers recommendations.

.2 Support independently of ductwork.

.3 Install with at 300 mm of flexible inlet ducting and minimum of four duct diameters of straight inlet duct, same size as inlet.

.4 Locate controls, dampers and access panels for easy access. Arrange for ceiling access to units: provide access doors or locate above easily removable ceiling components.

.5 Do not support from adjacent.

.6 Install each unit individually and from the structure.

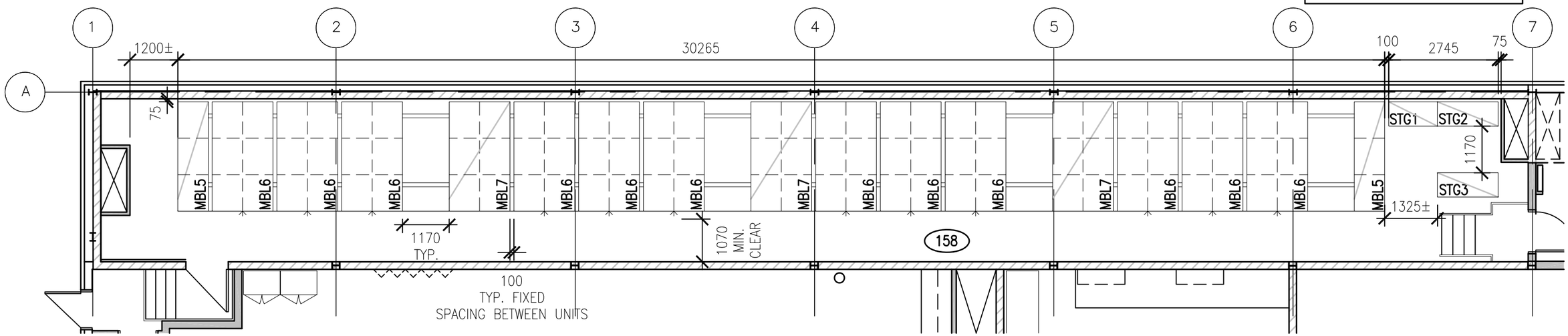
1.3 CLEANING

.1 Proceed in accordance with Section 01 74 11 - Cleaning.

.2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

CONFIRM ALL DIMENSIONS ON SITE PRIOR TO LAYOUT



NORTH

1 / AR-3

MOBILE SHELVING – CLEARANCES

1:100

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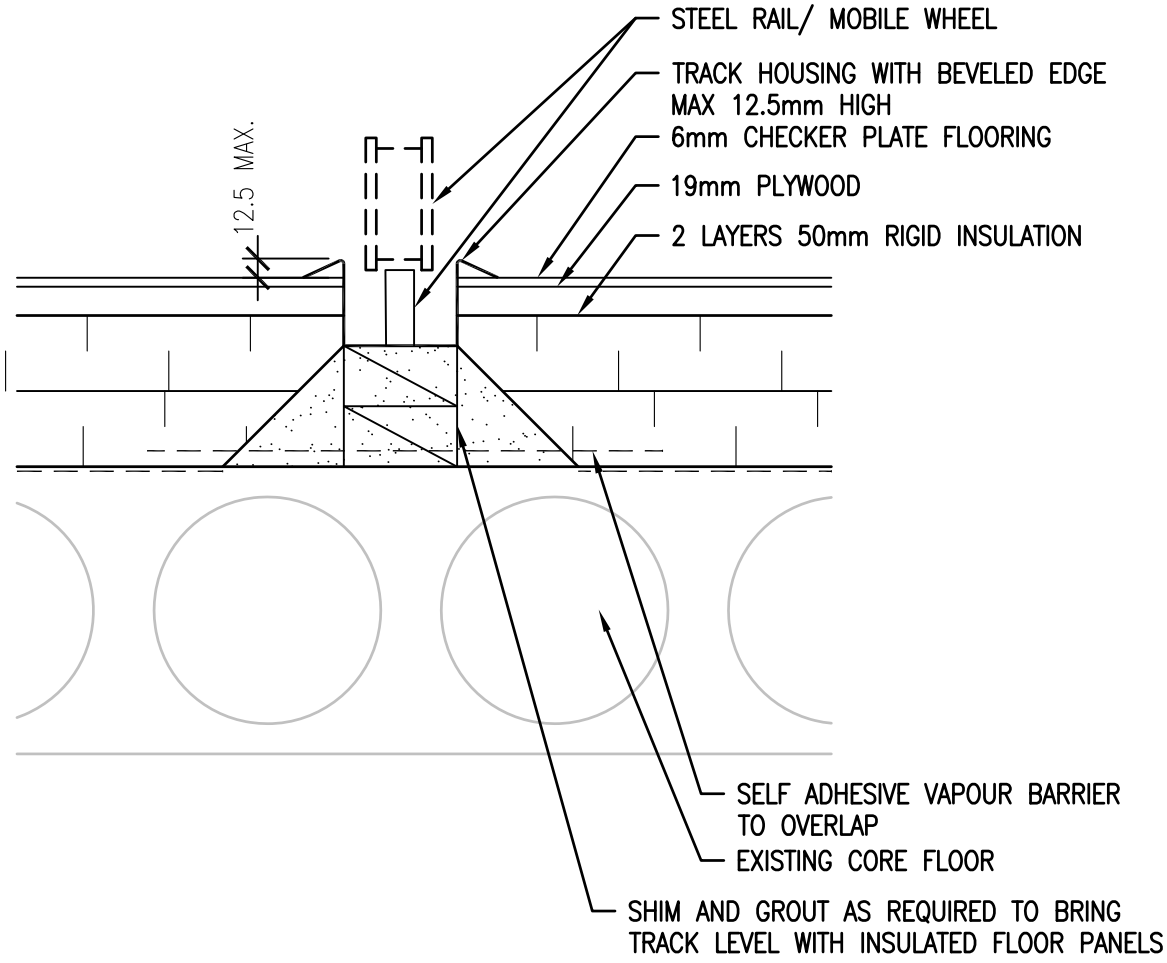
PROJECT TITLE **INTERIOR FIT-UP** **REGINA, SASKATCHEWAN**	DATE **2016-05-25**	PROJECT NO. **13/15**
	SCALE **AS SHOWN**	DRAWING NO.
DRAWING TITLE **MOBILE SHELVING - CLEARANCES**	DRAWN **VS**	**AR-3**
	CHECKED **RP**	



1 / AR-4 GROUTED TRACK DETAIL – ROOM 155

1:5

2016/05/25 X:\SEPW PROJECT FILES\2015\13-2015 TECH ICE LTS FIS FORENSIC LAB\ACAD\WORKING DRAWINGS\AR SHEETS\PLOT FILES\AR4 GROUTED TRACK DETAIL

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PROJECT TITLE **INTERIOR FIT-UP** **REGINA, SASKATCHEWAN**	DATE **2016-05-25**	PROJECT NO. **13/15**
	SCALE **AS SHOWN**	DRAWING NO.
DRAWING TITLE **GROUTED RAIL DETAIL - ROOM 155**	DRAWN **VS**	**AR-4**
	CHECKED **RP**	